

Construction of the Maasvlakte Zuid Rail Yard, removing an important railway bottleneck in the port of Rotterdam

The Port of Rotterdam ("Port") plans to further invest in the port's railway infrastructure to accommodate the growing demand for goods in an efficient and sustainable manner. The construction of the Maasvlakte Zuid Rail Yard will connect major container terminals on Maasvlakte 2 with the European hinterland, removing an important railway bottleneck in the port of Rotterdam. This investment will reduce carbon emissions and air pollution and enable clean and reliable multimodal transport from Europe's largest seaport to various destinations across the continent. To support the development of the new Maasvlakte Zuid Rail Yard, the Port will apply for a grant contribution under the 2023 CEF Transport programme for the first phase of the project: the realisation of the first cluster of six new rail tracks.

Freight transport is the backbone of the EU's internal market and enables European companies to sell their products across the continent. At the same time, freight transport is responsible for over 30% of transport CO2 emissions. As the EU economy grows, emissions

are expected to rise. Freight transport is projected to grow by around 25% in 2030 and by 50% in 2050. To allow the EU's single market to continue growing, decarbonisation measures are needed to make freight transport more efficient and sustainable.

Rail freight has the potential to become the main modality of the future, as it is efficient, sustainable, and reliable. Rail freight can help reduce CO2 and NOx emissions from road transport and is a good alternative to inland waterways in the event of high or low water levels. Moreover, rail is the most cost-efficient alternative for long distance transport.

As part of the European Green Deal, the European Commission expects the market share of rail freight traffic to increase by 50% in 2030 and by 100% in 2050. To facilitate intermodal transport by rail and to create a fully interoperable rail freight network, investments in rail capacity are fundamental. Projects such as the construction of the Maasvlakte Zuid Rail Yard play a key role in achieving these objectives and unlocking the potential of rail freight. This was also the conclusion of a study financed by the EU into the removal of the railway bottleneck on Maasvlakte 2 ¹⁾ (see: box 3).

¹⁾ "Expansion of the existing rail capacity at the C2-bend providing access to the terminals on Maasvlakte 2".

THE PORT'S AMBITION FOR MORE SUSTAINABLE AND EFFICIENT RAIL CONNECTIONS

Rotterdam is home to Europe's largest seaport and one of the world's leading logistics hubs. Approximately 15 million containers are transhipped in Rotterdam every year. The port is the start and end point on three TEN-T Core Network Corridors (North Sea-Baltic, North Sea-Mediterranean, Rhine-Alpine), with Germany and Northern Italy being the most popular destinations and Central European destinations such as Poland increasing in share.

The Port has the ambition to continue facilitating growth, but in a sustainable, efficient, and data-driven manner. This requires investments in aspects such as the physical accessibility of the port. In recent years, the Port has joined forces with ProRail, which is responsible for the maintenance and extension of the Dutch railway network infrastructure, to further develop railway infrastructure in the port area. The Port has implemented several large projects to expand and improve rail tracks, such as the construction of the Theemswegtracé. As a result, the port now accommodates more than 400 international container rail connections per week. The Port is now about to start the realisation phase of its next major project: the construction of the Maasvlakte Zuid Rail Yard, which by removing an important railway bottleneck will accommodate future growth in the port.



THE NEED FOR INCREASED RAIL CAPACITY ON MAASVLAKTE 2

To meet growing consumption demand, two major container terminals on Maasvlakte 2 – Rotterdam World Gateway (“RWG”) and APM Terminals – have announced their plans to expand terminal capacity. At RWG, the expansion will consist of an additional 45 hectares of terminal area and 920 metres of quay wall, resulting in an extra capacity of 1.8 million TEU containers. At APM Terminals, there will be a 47.5-hectare expansion with one kilometre of deep-sea quay wall for a total extra capacity of 2 million TEU. This will result in a terminal capacity growth of more than 50% by 2031. This means that the various modalities such as rail freight will need to grow in parallel to accommodate the container traffic.

This increased terminal capacity will result in more traffic between the container terminals on Maasvlakte 2 and the European hinterland. It will be difficult to accommodate these freight flows via the existing railway connection at the so-called ‘C2-bend’. The CEF-Transport funded study has concluded that this connection is projected to become a bottleneck from 2025 onwards. If not addressed, the increased traffic will result in congestion, greater CO₂ and NO_x emissions, and potentially a backwards modal shift from rail to road.

Together with ProRail, the Port is taking measures to alleviate the C2-bend and create additional rail capacity to accommodate the goods coming from and to Maasvlakte 2 in a sustainable and efficient manner. This will be done most notably by developing the Maasvlakte Zuid Rail Yard, but also through other measures (see: box 1).

BOX 1

THE PORT'S 2030 LOGISTICS VISION

To prepare for the anticipated growth on Maasvlakte 2, the Port and ProRail have drafted the “2030 Logistics Vision” for the port area. The plan describes the key bottlenecks that need to be addressed. One of the most important measures outlined in the plan is the construction of the Maasvlakte Zuid Rail Yard, removing an important railway bottleneck. This concerns the realisation of twenty-four tracks, divided into four track clusters (of six tracks each) and two diagonal through-tracks.

In addition, the plan includes procedural measures, such as deploying hybrid locomotives and ‘sailing’ trains into large container terminals, as well as other infrastructure measures; including the electrification of two railway tracks at Europoort to eliminate all diesel locomotives in the port, and equipping major terminals in the Botlek and Waalhaven-Zuid area to accommodate 740-metre long trains.



MAASVLAKTE ZUID RAIL YARD: A CATALYST FOR FURTHER GROWTH

The new rail yard will establish new, modern rail tracks, which allow trains to circumvent the port's Maasvlakte 2 area. This project generates clear, specific, and obtainable efficiency gains: the avoidance of a railway bottleneck will result in a modal shift of 360 trains per year (see: box 2). Moreover, the completion of the Maasvlakte Zuid Rail Yard will also enable Rotterdam to maintain its position as an important energy port for Northwestern Europe. The increased rail freight capacity will benefit various energy transition projects located on Maasvlakte 2 (e.g. biofuel plants, factories supplying the offshore wind industry, green hydrogen electrolyzers) and facilitate the distribution of energy carriers to the hinterlands. As such, the Maasvlakte Zuid Rail Yard is a catalyst of sustainable growth in Europe's largest seaport.

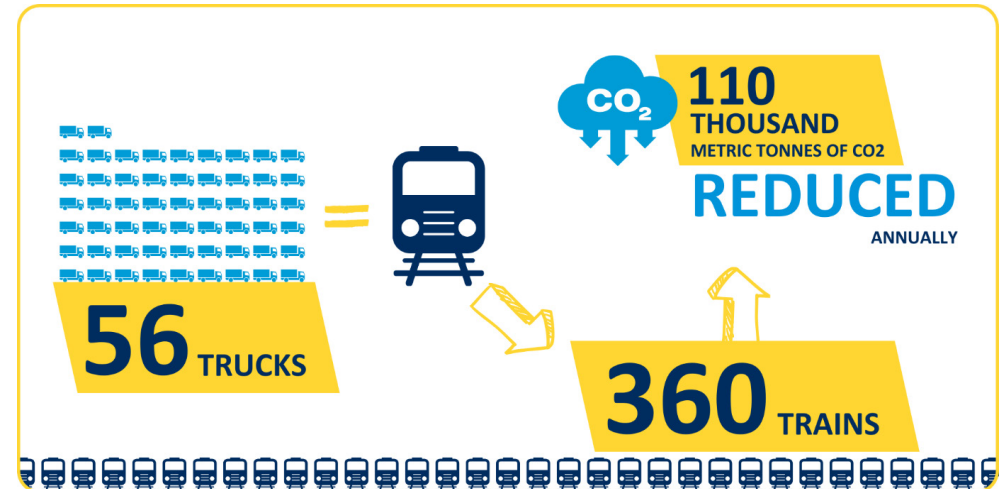
With the CEF Transport-funded study, preparations were made for the realisation of the Maasvlakte Zuid Rail Yard area (including the initial works, the construction of the first phase/track cluster of the new Zuid rail yard). The construction of the first track cluster and associated preparatory works are scheduled to start in 2024 and to be completed by the end of 2027. To ensure there is sufficient funding, the Port will apply for the CEF Transport grant contribution for the roll-out of this first project phase: a new cluster of six tracks and the necessary infrastructure to enable future expansions (see: box 3).

BOX 2

DELIVERING ON THE EU'S CLIMATE OBJECTIVES

The development of the Maasvlakte Zuid Rail Yard is an important investment in realising the commitments of the Dutch Climate Agreement and the EU's climate objectives as outlined under the European Green Deal. The project's cost-benefit analysis ("CBA"), based on the CINEA methodology, estimates that the completion of the project would generate a modal shift of 360 trains on an annual basis. With the knowledge that the average trajectory from the port of Rotterdam to its hinterland destination measures 373 km, and a freight train moves a load equivalent to 56 trucks, this modal shift would result in an annual reduction of 110,000 metric tonnes of CO₂.

Particular attention will be paid to climate-proofing the works and a smooth integration of the infrastructure into the surrounding dune landscape. In this way, the project contributes to biodiversity and provides added value to the environment.



BENEFITS OF GRANT CONTRIBUTION FOR THE FIRST PROJECT PHASE

The expected investment in the initial works is 100 million euro for the first phase (cluster of six tracks of the Zuid rail yard) for which a CEF Transport grant contribution is necessary. The Port has already committed itself to financing the preparatory works, including the investments in cables and pipelines. The expected investment will not only generate direct wins as a result of the development of the first phase, but will also enable more efficient capacity gains in the future as it quite literally lays the foundation for the three additional rail clusters (resulting in a total of 24 tracks).

A CEF Transport contribution for the first phase of the construction of the Maasvlakte Zuid Rail Yard would serve as a catalyst for the development of the next two project phases (track cluster 2 and track clusters 3 & 4) and would accelerate the roll-out of the Port's 2030 Logistics Vision. It is no surprise that the conducted CBA shows a Benefit to Cost Ratio of 1.8; an especially favourable score for a high-investment rail project. Therefore, the Port will submit a works application for the Maasvlakte Zuid Rail Yard under the 2023 CEF Transport Call.

BOX 3

CEF TRANSPORT 2019 STUDY ON IMPROVING RAIL ON MAASVLAKTE 2

In 2019, the European Commission's CEF Transport programme contributed to a study which outlined a long-term trajectory to improve rail freight transport in the port's Maasvlakte 2. The study identified a long-term project (which fed into the 2030 logistics vision, see box 1), as well as the first pieces of the puzzle to be laid out to put this vision into practice: the first new rail yard tracks cluster, an expansion of the C2-bend rail capacity, electrification of remaining tracks and the installation of cables and pipelines to enable further project phases. The construction of the Maasvlakte Zuid Rail Yard will realise the recommended new rail yard tracks while also facilitating the full strategy to improve green and reliable rail connections in the port.

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ProRail



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